

# New state record of *Lopesia similis* Maia (Insecta, Diptera, Cecidomyiidae)

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**ABSTRACT:** *Lopesia similis* Maia, 2004 (Insecta, Diptera, Cecidomyiidae) is recorded for the first time in the state of Mato Grosso do Sul. This species induces leaf galls on *Protium heptaphyllum* March (Burseraceae).

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*Lopesia* Rübsaamen 1908 is a widely distributed genus of gall midge, with records in the Nearctic, Afrotropical, Australasian and Neotropical regions. The genus includes 23 described species, being 18 Neotropical (Gagné 2010).

*Lopesia similis* Maia, 2004 was described based on material from Parque Nacional da Restinga de Jurubatiba, Rio Janeiro State, Brazil (biome: Atlantic Forest) (Narahara *et al.* 2004). Later, the species was recorded in the municipality of Tiradentes in Minas Gerais (biome: Cerrado) by Maia and Fernandes (2004), and in Arraial do Cabo, Rio Janeiro (biome Atlantic Forest) by Maia and Souza (2013). This gall midge induces leaf rolls on *Protium heptaphyllum* (Aubl.) March (Burseraceae) and it is characterized by the shape of the spatula (2-toothed), full complement of lateral papillae, terminal segment without lobes and spiny integument. The pupa has antennal horn acuminate apically, and full complement of cephalic, lower and lateral papillae. Adults: the second segment of the palpus is the longest one, the tarsal claws are wide, the aedeagus is slender, the male abdominal tergite 7 is incompletely sclerotized and tergite 8 is entire and bandlike (see Narahara *et al.* 2004).

*Protium heptaphyllum* is commonly known as “almecegueira” or “breu”. Its geographic distribution comprises South America (Colombia, Venezuela, Suriname, Brazil and Paraguay) (Matos 1997). In Brazil, it occurs in nearly all states, except in Santa Catarina and Rio Grande do Sul (Maia 2001). *Protium heptaphyllum* is known as an excellent source of oleoresin. Its popular use in medicine is very common, being used as anti-inflammatory, analgesic, expectorant and insect repellent (Revilla 2002). The resin is also used in the manufacture of varnishes, as impermeable agent of woody boats and as incense in religious rituals (Bandeira *et al.* 2001).

Leaf galls on *P. heptaphyllum* were collected in the Sítio Arqueológico CERA, situated in the Reserva Estadual da Universidade Federal do Mato Grosso do Sul (REUEMS), municipality of Aquidauana, Mato Grosso do Sul State ( $20^{\circ}26'13''$  S,  $W 55^{\circ}39'39''$  S). This area belongs to the region known as Upper Pantanal and is characterized as

an interface between the biomes Cerrado and Pantanal (<http://www.uems.br/pgagro>).

Specimens of the host plant were investigated on 02–03 April 2012 and 05 December 2012. Samples with flowers and fruits were collected and dried for plant identification. The exsiccate is deposited in the herbarium of Universidade Federal Rural da Amazonia (FC).

The gall was photographed in field using a digital camera (Figure 1). Galled leaves were removed from the host plant and carried in labeled plastic bags to the laboratory. Some galls were dried and deposited in the gall collection of Museu Nacional/Universidade Federal do Rio de Janeiro (MNRJ). Other galled leaves were kept in labeled plastic pots for rearing of the galler. The pots were checked daily for adult emergence. Immature specimens were obtained by gall dissection. The specimens were first preserved in 70% ethanol and later mounted on slides following the methodology described in Gagné (1994). The material was deposited in the Diptera collection of MNRJ. The galling species was identified based on gall morphology and according



FIGURE 1. Leaf rolls on *Protium heptaphyllum* induced for *Lopesia similis*.

to the species description of Maia, 2004 (Narahara *et al.* 2004).

Marginal leaf galls were found on *P. heptaphyllum* in the studied area. Although specimens of the host plant were investigated in April and December of 2012, samples of the gall were found only in April. The galling species was identified as *Lopesia similis* Maia, 2004.

The previous records of *L. similis* include only three localities, two in the State of Rio de Janeiro: Jurubatiba and Arraial do Cabo (Atlantic Forest) (Maia 2001 and Maia and Souza 2013, respectively), and the other in the State of Minas Gerais: Tiradentes (Cerrado) (Maia and Fernandes 2004). So, the geographic distribution of this gall midge was restricted to the Southeast region of Brazil. *Lopesia similis* is recorded for the first time in the State of Mato Grosso do Sul, in an interface area between the biomes Cerrado and Pantanal. This new record expands the distribution to the Central-western Region, filling a distributional gap of more than 1,200 km. As the host plant species is wide-spread in Brazil, *L. similis* can also have a wider distribution. More surveys in not investigated areas are necessary to understand the pattern of distribution of this species.

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